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Prospective Evaluation of a Watch Policy in Patients with Inoperable Non-Small Cell Lung Cancer

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Abstract—*The requirement for palliative chest radiotherapy in patients with non-small cell lung cancer (NSCLC) was assessed in a study of* 134 *inoperable patients not suitable for radical radiotherapy. Immediate chest radiotherapy was judged necessary in* 86 (64%) *because of significant symptoms from intrathoracic tumour or involvement of proximal airways. Forty-eight patients were monitored regularly without initial radiotherapy and of these,* 26 (54%) *required later chest irradiation because of progessive and significant symptoms due to intrathoracic disease. Median symptom-free survival in this group was* 10 *months.*

The requirement for immediate or delayed chest irradiation could not be predicted from either patient or tumour characteristics.

The proportion of patients with NSCLC requiring palliative chest irradiation may have been overestimated from this study population; even so 22 *of* 134 *patients* (16%) *did not at any stage in their illness require radiotherapy for chest symptoms.*

INTRODUCTION

THE OPTIMAL management of patients with inoperable, incurable, non-small cell lung cancer (NSCLC) having few or absent respiratory symptoms at presentation remains under debate. The value of immediate chest radiotherapy, compared to treatment delayed to the onset of significant symptoms, is currently being assessed in terms of quality and duration of survival by two randomized trials, that of the EORTC Lung Cancer Co-operative Group which commenced in January 1983, and that of the West of Scotland Clinical Trials Unit and the Finsen Institute, Copenhagen, activated in January 1984. Both are at present some way from completion.

The question of immediate radiotherapy vs. treatment delayed to the onset of significant symptoms is of clinical importance only if radiotherapy can be avoided altogether in a significant proportion of patients. This question has been addressed by a prospective evaluation of lung cancer patients referred to a joint consultation clinic at a District General Hospital on the outskirts of London.

METHOD

Two hundred and one patients attended a lung cancer clinic at St. Helier Hospital between November 1980 and October 1983 and were seen by a Consultant Radiotherapist together with a Consultant Chest Physician. Patient referrals were made to the clinic directly from General Practitioners, from the Department of Thoracic Surgery or from other departments within the hospital. Sixty-seven patients were excluded from the current analysis, including 32 patients with small cell lung cancer (SCLC) subsequently referred for chemotherapy, 25 patients with NSCLC referred for curative surgery, 5 patients referred from other hospitals with specific requests for immediate radiotherapy, and 5 patients with lung metastases from non-bronchogenic primary tumours, see Table 1. No patients had received previous surgery, chemotherapy or radiotherapy.

The characteristics of the 134 inoperable patients with NSCLC are shown in Table 2. Initial investigations included clinical examination, haematology, chest radiograph, in all patients and bronchoscopy in 114/134 (85%). Further investigations, e.g. isotope scans, were performed only as indicated clinically. The TNM stages are summarized in Tables 3–5.

Pathological confirmation of lung cancer was possible in 110/134 (82%) patients, the diagnosis being based on fibreoptic bronchoscopy in most cases, see Table 6. In 24 (19%) patients a clinical diagnosis of lung cancer was accepted given characteristic clinical, radiological or bronchoscopic findings, and patient age and general con-

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Table 1. *Patients referred to Joint Clinic at St. Helier District General Hospital, November* 1980–*October* 1983

	No. of patients
Chemotherapy for SCLC	32
Surgical resection of NSCLC	25
Outside referrals for radiotherapy	5
Lung metastases	5
Inoperable NSCLC patients	134
Total	201

Table 2. *Patient characteristics of* 134 *inoperable NSCLC patients*

Mean age (range)	70 years (44–87)
Male : Female	100 : 34
ECOG < 2	127/134 (95%)
Weight loss > 10%	52/107* (49%)

*Weight loss not recorded in 27 patients.

Table 3. *Bronchoscopic/radiological T stage in inoperable NSCLC patients*

	No. patients (%)
T1	7 (5)
T2	72 (54)
T3	50 (37)
TX	5 (4)
Total	134 (100)

Table 4. *Clinical/radiological N stage in inoperable NSCLC patients*

	No. of patients (%)
N0	35 (26)
N1	44 (33)
N2	33 (25)
NX*	22 (16)
Total	134 (100)

*Unevaluable due to collapse/consolidation of adjacent lung.

Table 5. *Metastases at presentation in inoperable NSCLC patients*

	No. of patients (%)
M0	93 (69)
M1	41 (31)
Total	134 (100)

dition, see Table 7. The probability of survival from diagnosis for the two groups of patients with clinical or pathological diagnosis is shown in Fig. 1. The two curves are very similar and lend indirect support to the accuracy of the clinical diagnosis, although the inclusion of a small number of patients with unsuspected small cell lung cancer cannot be ruled out.

At their first attendance, patients were assessed clinically and radiologically and the bronchoscopic findings reviewed. Using this information two groups of patients were identified, those requiring immediate chest radiotherapy and others eligible for a watch policy, see Table 8. Patients requesting information were informed of their diagnosis and prognosis. The majority of patients were aware of their lung cancer diagnosis; those accepting a

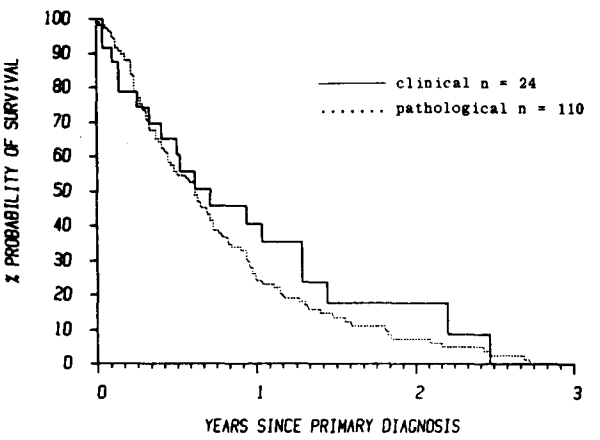

Fig. 1. *Probability of survival in patients with a pathological compared to a clinical diagnosis of lung cancer.*

Table 6. *Pathological type of lung cancer*

	No. of patients (%)
Squamous carcinoma	77 (57)
Adenocarcinoma	15 (11)
Large-cell carcinoma	18 (13)
Unknown (clinical)	24 (19)
Total	134 (100)

Table 7. *Clinical diagnosis of lung cancer based on the following*

	No. of patients
Overt metastases	11
Tumour seen at bronchoscopy	6
Mediastinal obstruction	2
Other, including age > 80	5
Total	24

Table 8. Initial management of patients with inoperable non-small cell lung cancer (NSCLC)

	No. of patients (%)
Immediate radiotherapy	86 (64)
Watch policy	48 (36)
Total	134 (100)

Table 9. Outcome of watch policy in 48 inoperable NSCLC patients

	No. of patients
Watch policy → Radiotherapy	26
Watch policy → No radiotherapy	22 (46%)
Total	48

watch policy understood that radiotherapy could be prescribed as and when it became necessary. The criteria for immediate radiotherapy were: presence of significant respiratory symptoms or thoracic pain despite simple analgesics, antibiotics and cough suppressants (59 patients); major involvement of a main bronchus or carina with significant stenosis judged likely to progress to complete obstruction (18 patients); patients judged suitable for high-dose radiotherapy with curative intent (5 patients). Of the remaining 4 patients treated with immediate radiotherapy, one was asymptomatic but requested immediate radiotherapy, a second asymptomatic patient was given thoracic irradiation as part of the management of hypercalcaemia unassociated with bone metastases, and two other patients with asymptomatic, incurable disease were prescribed immediate treatment for reasons that were not clear from the case-notes.

Both groups of patients were seen regularly in the joint clinic at intervals of 1–4 months. At each visit symptoms and general condition were reassessed informally with radiological and haematological investigations performed only as indicated. The criteria for chest radiotherapy in the watch policy group included the development of respiratory symptoms or thoracic pain arising from progressive local–regional disease which could not be controlled by simple medical measures.

Chest radiotherapy was delivered using megavoltage X-rays or Cobalt gamma rays using antero–posterior opposed fields to encompass known disease to a prescribed mid-plane dose of 20Gy in 5 days or 30Gy in 10 days. In selected patients a second phase of treatment was given using oblique posterior fields to avoid the spinal cord.

RESULTS

The outcome of a watch policy is summarized in Table 9. There were no significant differences in patient or disease characteristics between those requiring immediate radiotherapy and those assigned a watch policy in terms of patient age, sex, performance status or TNM stage. Within the group of patients assigned to a watch policy there were no apparent clinical, radiological, bronchoscopic or histological findings which predicted the later requirement for chest radiotherapy.

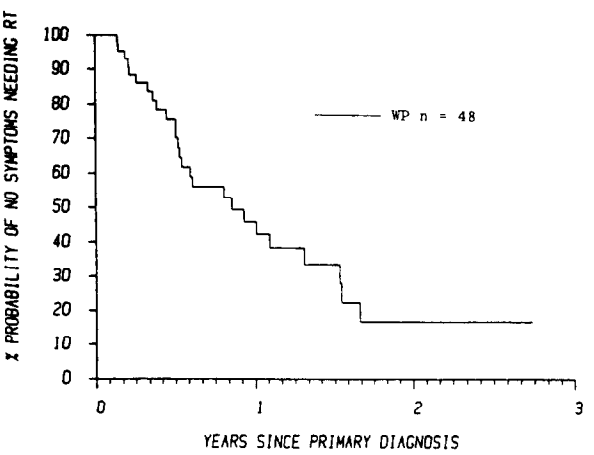

Fig. 2. Cumulative probability of requiring no palliative radiotherapy in patients assigned to a watch policy.

Twenty-six out of 48 (54%) watch policy patients subsequently required radiotherapy for progressive thoracic symptoms, typically cough, dyspnoea, haemoptysis or pain. Twenty-two (46%) patients died, mostly as a result of progressive metastatic disease, without requiring thoracic irradiation. The cumulative probability of remaining free of significant respiratory symptoms or thoracic pain is shown in Fig. 2.

DISCUSSION

This study considers the treatment outcome of 201 consecutive patients with lung cancer referred to a joint chest clinic over a 3 year period. Of 134 patients with inoperable NSCLC, just over one third (48 patients) were suitable for a watch policy and almost half of these (22 patients) did not require chest irradiation prior to death. Thus, 16% of inoperable NSCLC patients avoided attending hospital for thoracic irradiation.

The proportion of all inoperable NSCLC patients eligible for a watch policy may be higher than this study indicates. For example, even at the level of a District General Hospital, General Practitioners and consultant colleagues may practise selection of cases referred to a specialized joint

chest clinic. Secondly, a proportion of patients in this study were given immediate irradiation regardless of symptoms because tumour was seen to cause narrowing of the main bronchi or carina at bronchoscopy. In these patients, the morbidity of possible whole lung collapse or stridor was considered sufficient to justify elective radiotherapy in the absence of objective data supporting this rationale of treatment.

We are not able from this study to comment on patient quality of life nor the ability of radiotherapy, immediate or delayed, to palliate symptoms. The study of Durrant *et al.* [1] demonstrated that neither chest radiotherapy nor mustine could prevent symptom development or prolong the survival of incurable lung cancer patients. Their protocol allowed delayed therapy to be given to watch policy patients for symptom control, and 57% did not require any specific anti-tumour treatment prior to death. This percentage included patients judged to be unfit to undergo radiotherapy once symptoms developed because of rapid disease progression. Their study group included an unknown proportion of small cell lung cancer cases (34% combined undifferentiated and small cell carcinoma) and excluded patients with extra-thoracic or intra-thoracic haematogenous metastases at presentation.

A second study from Oxford [2] excluded patients in whom immediate treatment was judged to be mandatory by the referring clinician (237 of 425 patients, 56%). Sixty-seven of the remaining patients were randomly assigned to a watch policy, and 30 of 51 patients surviving longer than 2 months were not given any anti-cancer treatment prior to death. The criteria for palliative chest irradiation are not stated in this study and 35 of the watch policy group had "uncontrolled troublesome symptoms continuing until death". The proportion of patients with lung cancer in whom palliative chest irradiation is not needed cannot be identified from this study.

In conclusion, a significant proportion (16%) of inoperable NSCLC patients required no chest radiotherapy prior to death. This finding highlights the importance of completing randomized trials of immediate vs. delayed radiotherapy in asymptomatic incurable patients, in whom comparisons of both quality and duration of patient survival can be made.

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